

**REMARKS/ARGUMENTS**

**AMENDMENTS TO THE CLAIMS**

Support for newly added dependent claim 22 can be found at page 11, lines 24, *et seq.* of the written description.

Support for newly added dependent claims 23 and 24 can be found in the original claims and at Table IV, Example No. 11 together with the other examples set forth in the tables.

**ALLOWABLE SUBJECT MATTER**

The allowance of Claims 2, 8, 12, 14 and 16-21 is acknowledged.

**CLAIM REJECTIONS – 35 USC § 102**

Claims 1 and 4-6 have been rejected under 35 U.S.C. § 102(b) as being anticipated by Kapuscinski et al. (US 5,374,364).

Reconsideration is respectfully requested. There is no overlap between the polymers recited in Claim 1 and those taught by Kapuscinski. EPDM does not fall within the scope of “polybutadiene” or a copolymer thereof. As those skilled in the art know, EPDM includes units deriving from non-conjugated diene – not from conjugated diene. There is no evidence to the contrary. Moreover, Kapuscinski suggests against the claimed invention inasmuch as the polymer structures taught by Kapuscinski include no backbone unsaturation. Indeed, the polymers taught at column 3 derive from  $\alpha$ -olefin or they are hydrogenated, which eliminates backbone unsaturation. All of the polymers set forth in claim 1 include backbone unsaturation. Furthermore, Applicants note that those skilled in the art do not equate nor include hydrogenated polybutadiene into a class with polybutadiene. These are distinct polymeric structures that are well understood by those skilled in the art and reference to one does not include the possibility of referring to the other.

The claims are also distinct from the teachings of Kapuscinski in that Kapuscinski does not teach terminating a living polymer and therefore does not necessarily teach a polymer structure having a terminal functional group. As those skilled in the art appreciate, Kapuscinski "graphs" to the polymer backbone and thereby provides a reaction site for a thiazoline-containing functionalizing agent. There is no evidence that this will result in a terminal functional group. As explained at page 11 of the written description, the formula  $\pi\text{-R}^1\text{-}\alpha$  denotes a polymer having a terminal functional group. Thus, when claim 1 is read in view of the written description, the same clearly defines over Kapuscinski.

In order to further highlight the arguments advanced by the Applicants, dependent claims 22-24 have been added and proper consideration is respectfully requested.

#### **OBVIOUSNESS-TYPE DOUBLE PATENTING**

The Examiner has provisionally rejected claims 1, 6, and 7 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-4 and 13-31 of each individually of Appl. No. 11/900,664 and US 7,462,677.

Applicants reserve the right to respond to this rejection. Moreover, Applicants maintain that in view of this response, this provisional rejection is the last pending issue and therefore should be removed by the Examiner.

The Examiner has further provisionally rejected claims 1, 4, 6, and 7 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1, 15, 16, 18, and 22 of copending Application No. 11/331,663.

Applicants reserve the right to respond to this rejection. Moreover, Applicants maintain that in view of this response, this provisional rejection is the last pending issue and therefore should be removed by the Examiner.

The Examiner has further rejected claims 1, 3, 6, 7, 9, 10, 13, and 15 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 20-68 of Fukushima U.S. Patent No. 7,186,845 (filed 10-20-2004).

Reconsideration is respectfully requested. The Examiner has indicated the argument set forth in the response dated December 8, 2008 is not accepted. Applicants seek further consideration.

Applicants maintain that the claimed invention, particularly as set forth in Claims 1, 3, 6, 7, 9, 10, 13, and 15, is distinct from the claims of U.S. Patent No. 7, 186,845. Applicant reiterates arguments set forth in the response dated December 8, 2008. The present Claims, when read in view of the written description, clearly define that the functional group  $\alpha$ , which is a sulfur-containing heterocycle, is present at the terminal end of the polymer. For example, in paragraph [0043], the specification states "The tail will therefore refer to that point of the polymer substituent main chain where the last monomer is added to the chain, which is likewise the point where the polymer is attached to the  $R^1-\alpha$  group of Formula I." Indeed, Formula I is identical to that set forth in Claim 1 showing this positioning. Also, the written description makes evident the fact that the sulfur-containing heterocycle group is positioned at the end or tail-end of the polymer as a result of a terminating reaction. In contradistinction, the functional groups claimed by Fukushima '845 are ostensibly attached to the backbone of a polymer via a reaction wherein the "Q functionality" forms a 1,3-dipolar addition group to an unsaturated carbon-carbon bond. Thus, the functional groups of Fukushima exist along the backbone of the polymer that is functionalized –not necessarily at the terminal end of the polymer.

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Reply to Office Action dated March 17, 2009  
Amendment dated June 15, 2009

**CONCLUSION**

It is respectfully submitted that all pending claims are in condition for allowance. Accordingly, Applicants request early and favorable reconsideration in the form of a Notice of Allowance.

If necessary to affect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to affect a timely response. Please charge any deficiency in fees or credit any overpayments to Deposit Account No. 06-0925 (Docket #: P02039US2A).

Respectfully submitted,

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Date

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